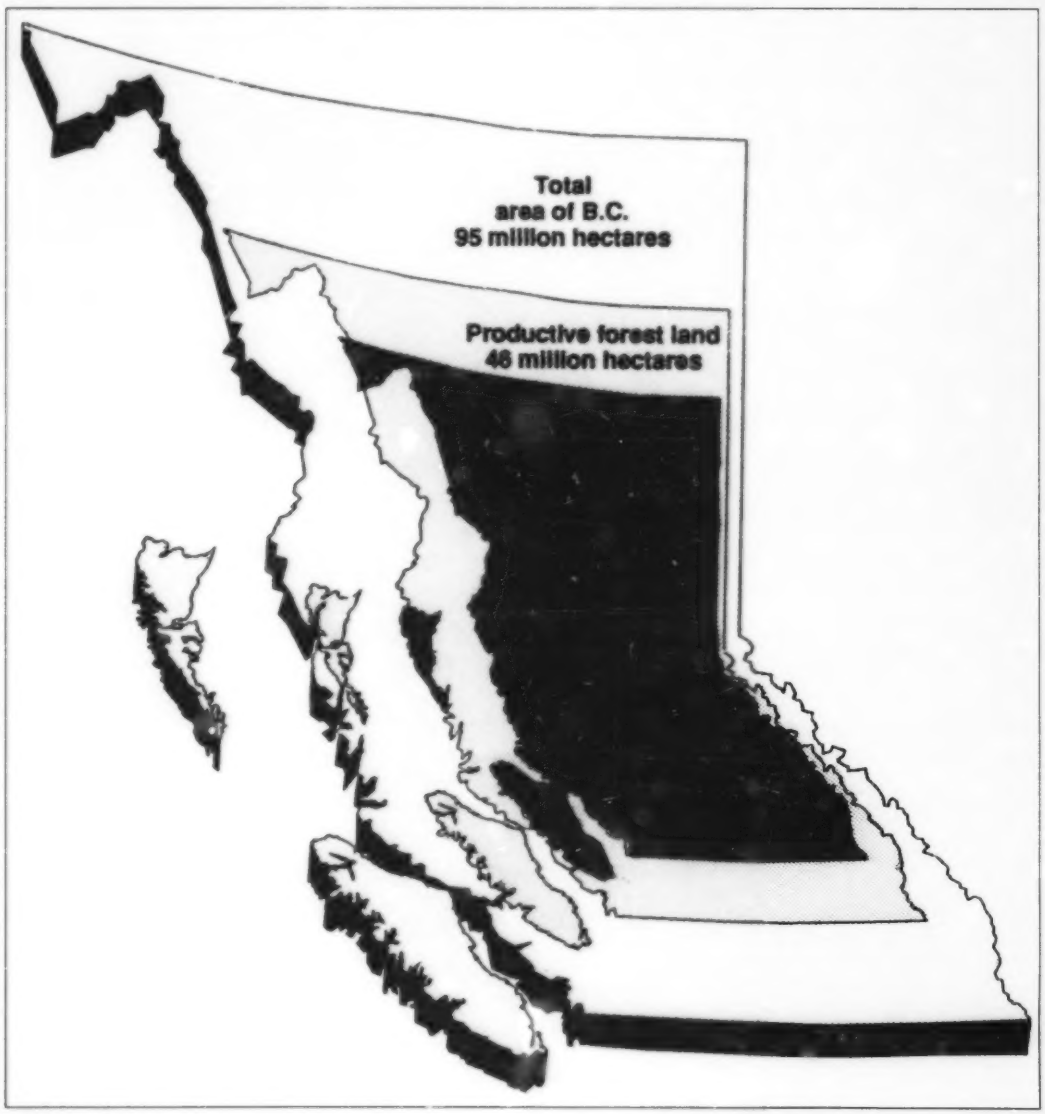
SILVICULTURE

1990 Summary of Backlog Not Satisfactorily Restocked Forest Land



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Executive Summary

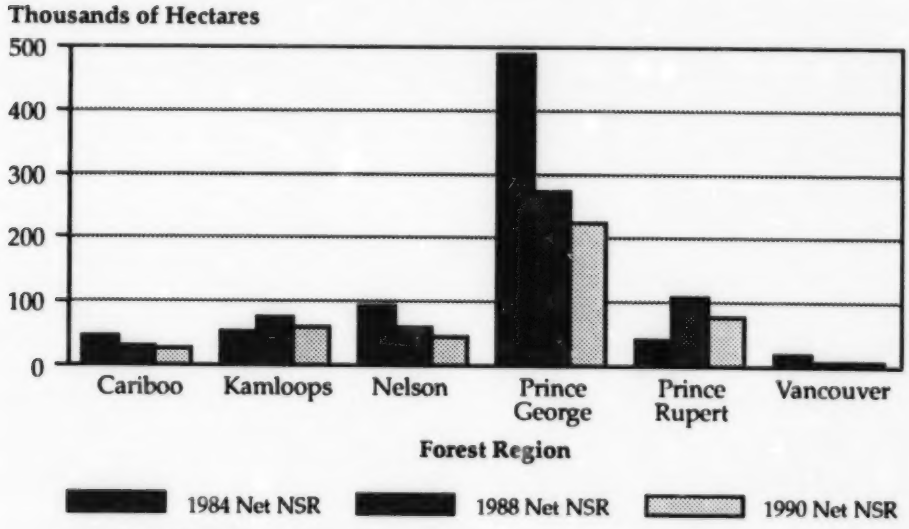
The 1984 Forest and Range Resource Analysis estimated that there were 738 000 hectares of good and medium site Crown land that had been harvested, burned by wildfire, destroyed by pests or other damage and were classified as backlog (pre 1982) not satisfactorily restocked (NSR). These areas were considered economically viable and of a high priority for silviculture activities. The estimate of the backlog NSR on Crown land was the motivation for the 1985-1990 Canada-British Columbia Forest Resource Development Agreement (FRDA).

Under FRDA, there has been increased reforestation activities on backlog NSR areas. Increased planting and silviculture surveys have resulted in fewer areas being classified as backlog NSR. Modifications in ecosystem classification and survey procedures, as well as modifications in silviculture stocking standards, have also resulted in less land being classed as backlog NSR.

Between May 1985 and January 1990, FRDA has provided funding for over 133 000 hectares of planting and 454 000 hectares of stocking surveys. These activities have resulted in a 301 300 hectare (41%) reduction in pre 1982 good and medium site backlog NSR land.

In 1984 the Forest and Range Resource Analysis estimated that there were 738 000 hectares of backlog NSR in the Province. The 1988 Summary of Backlog Not Satisfactorily Restocked Forest Land indicated that backlog NSR had been reduced to 553 100 hectares. The present summary indicates that as of January 1990, there are 436 700 hectares of pre 1982 backlog NSR remaining on good and medium sites in British Columbia.

Trends in Net Backlog NSR by Region
Good and Medium Sites



Backlog NSR Equals Pre-1982 NSR.
March 8, 1990

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Summary of Provincial Backlog NSR Land

This report updates the "1988 Summary of Backlog Not Satisfactorily Restocked Forest Land" published by the Ministry of Forests in September 1988 and uses the same methodology and format as the original report.

Backlog NSR Definition

The term "not satisfactorily restocked" and its acronym NSR, is used to describe forest lands that are not growing to their full potential due to insufficient stocking of acceptable tree species. The Ministry of Forests defines NSR as productive forest land that is not stocked to the minimum stocking standard. **Backlog NSR is defined as NSR resulting from land denuded before 1982.**

Specific definitions of NSR have changed over time and have been periodically redefined as survey procedures and management objectives have evolved. Today in British Columbia, the stocking status of any given area is evaluated on the basis of ecosystem specific standards that define acceptable tree species and target and minimum stocking levels. The criteria and standards used to determine NSR lands have been developed from ongoing research. In order for a tree species to be considered as acceptable for restocking a site, it must be ecologically suitable and economic to harvest and utilize.

Changing market conditions can dramatically affect the acceptability of a tree species for restocking sites and consequently forest land status. For example, recent changes in market demands and utilization of aspen have made this species acceptable for restocking specific ecosystems in the Fort St. John and Dawson Creek areas. Areas previously stocked with aspen and called NSR are now being reclassified as satisfactorily restocked if sufficient numbers of aspen exist on site.

Areas that are classed as NSR are considered as not contributing to the forest's growing stock, although they may still contribute to other resource values. If left untreated this has a direct influence on future timber supply and allowable annual cut levels. The estimate of backlog NSR is used to determine the amount of silviculture activities required to convert NSR lands to a satisfactorily restocked status.

NSR is a broad term and does not describe the silvicultural regime, operability or treatment priority for a given site. Denuded areas have differing levels of disturbance, site quality, vegetative cover and forest resource management considerations. These conditions will also change with time. Therefore, NSR estimates are refined in order to produce a silviculturally meaningful statistic, one that can be used to plan and implement reforestation activities.

This summary incorporates the use of a "net-down" process to reduce gross NSR estimates to a net NSR figure.

Gross Not Stocked Forest Land

In 1989, Inventory Branch estimated that there were about 3.8 million hectares of not stocked Crown land in British Columbia (Table 1). About 1.1 million hectares of not stocked forest land originates from harvesting, wildfire, pests and other causes occurring between 1982 and 1989. Responsibility for funding the reforestation of these areas lies with the Ministry (990 000 hectares) the Private Sector (95 000 hectares) and the Small Business Forest Enterprise Program (28 000 hectares).

Gross backlog not stocked land originating from harvesting, wildfire, pests and other causes, occurring prior to 1982, amounts to about 2.7 million hectares. A large portion of gross backlog not stocked land is considered as non-commercial brush and timber, inaccessible, uneconomic or on low or poor site class land. Much of this land requires reclassification surveys. About 0.55 million hectares are classified as gross good and medium site backlog NSR as defined in this report (Table 1). Only the net good and medium site backlog NSR is presently considered for reforestation funding.

Summary of Provincial Backlog NSR Land

Backlog NSR Net Down Description

The estimate of net good and medium site backlog NSR on Crown lands was determined after a net-down procedure which made deductions for areas that were considered to be naturally regenerated or areas which had low economic operability. Appendix 3 details the net down deductions by forest region.

The net backlog NSR land in this report excludes NSR areas which were:

- in poor and low site productivity classes;
- remote and lacking access such as in wildfire burns in the northern interior;
- harvested by selection, shelterwood and seed tree systems and designed to regenerate naturally;
- older regenerated stands with sufficient numbers of well spaced crop trees per hectare.

Net Backlog NSR

This summary indicates that 436 700 hectares of pre 1982 backlog NSR are good and medium site and are potential candidates for silviculture activities. About 63% of this NSR land was created through harvesting and 37% was created through wildfire and other natural causes (Table 1).

The 1984 Forest and Range Resource Analysis estimated that there were 738 000 hectares of good and medium site backlog NSR land in the province (Table 2). The 1988 Backlog NSR Summary reported that this figure had decreased to 553 145 hectares as of September 1988. Over the last 5 years there has been a 301 300 hectare (41%) reduction in good and medium site pre-1982 backlog not satisfactorily restocked land.

Net Treatable Backlog NSR

Net treatable NSR is a further refinement of net NSR and represents the estimate of NSR that is potentially treatable given current management constraints. Net treatable NSR also excludes areas which are expected to regenerate naturally or be found to be adequately stocked with natural regeneration once surveyed. Regional estimates produced in April of 1989 indicate about 250 000 hectares of good and medium site lands are available for treatment.

Factors Responsible for Backlog NSR Reductions

The reduction in backlog NSR land in the past 5 years can be attributed to increased planting on backlog sites, increased silviculture survey work, and to modifications in silviculture stocking standards and classification procedures.

The Canada-B.C. Forest Resource Development Agreement (FRDA) has provided the majority of funding for backlog reforestation activities. Between May 1985 and March 1990 over 132 000 hectares of backlog NSR land have been rehabilitated and planted. In addition over 454 000 hectares of backlog NSR have been surveyed to determine forest land stocking status and to prepare silviculture prescriptions. As of March 1990, these activities have helped reduce backlog NSR land to 436 700 hectares.

The province is looking forward to renewing the FRDA agreement with the Federal government with the goal of eliminating pre-1982 good and medium site backlog NSR by the year 2000. Further reductions in backlog NSR are expected through continued backlog reforestation activities, silviculture surveys and updates to the provincial database.

This report details the backlog NSR land by forest region, Timber Supply Area and Tree Farm Licence, (pages 24 and 25, Appendix 2).

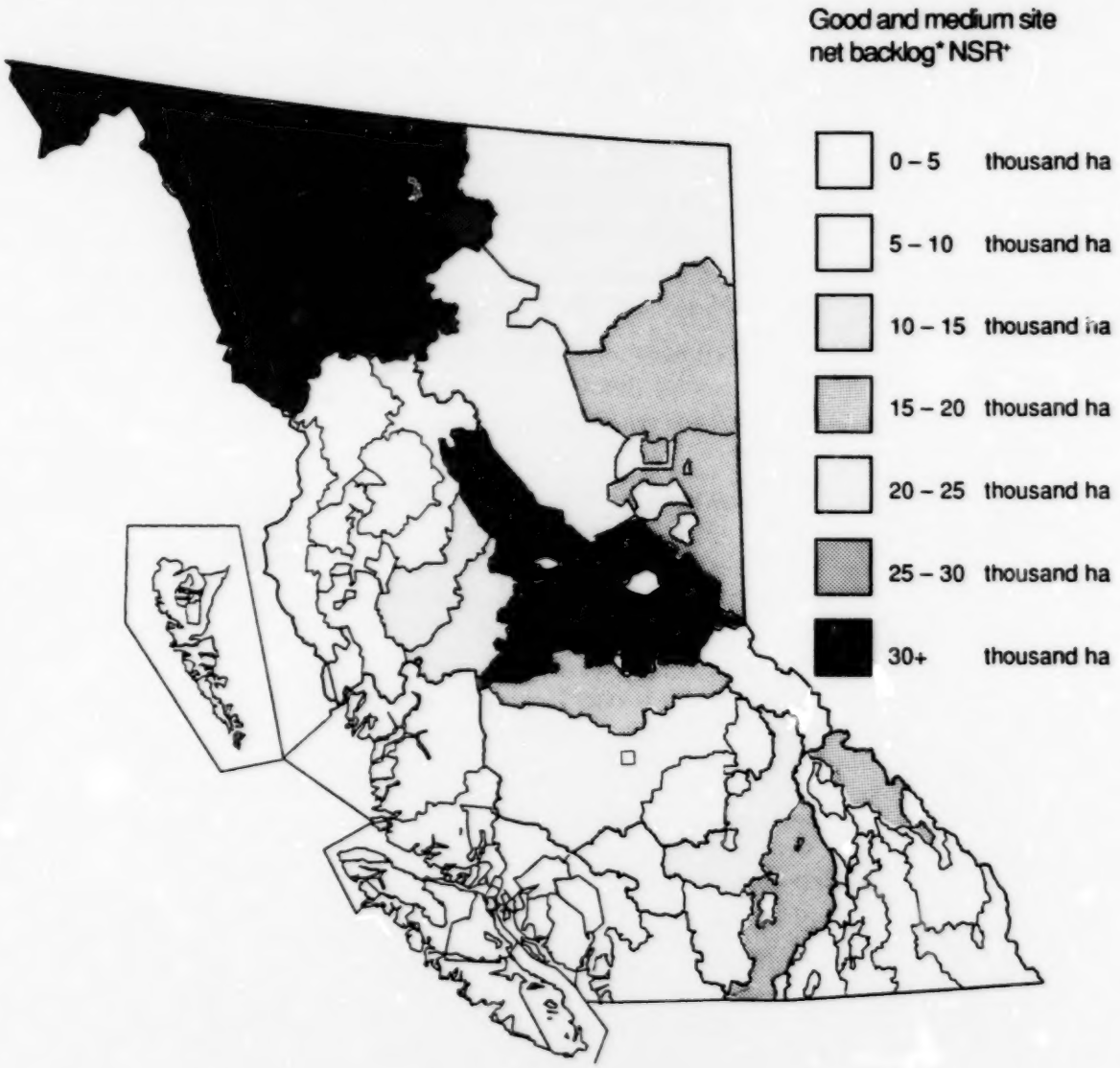
Sources of Information

The data used to produce these summary tables were obtained from several sources:

1. Estimates available at the time of signing the 1985-1990 Canada-British Columbia Forest Resource Development Agreement indicated that there were 644 522 hectares of good and medium site backlog NSR in the province. In 1984(1), the Ministry produced updated information indicating that the backlog NSR was 738 000 hectares (Table 2). This estimate was confirmed and published in Renewal in 1986(2).
2. Data on the total forest land and total gross NSR comes from the 1988/89 Ministry of Forests Annual Report, (Table 1). This information was submitted by the Ministry of Forests Inventory Branch. The statistics on the total productive and available forest land are from the Ministry of Forests 1984 Forest and Range Resource Analysis.
3. Data for the backlog NSR on Tree Farm Licences (TFL) were derived from hand compiled submissions by the licence holders.
4. Data for the gross good and medium site backlog NSR on Timber Supply Areas was derived from the computerized Ministry of Forests History Records. Data for the net NSR were derived from the gross area totals after deductions were made for areas considered to be economically inoperable or likely to regenerate naturally.
5. The History Records were used to derive the net backlog NSR on TSA's for all regions. The intent of using the History Records for the net backlog NSR number is to:
   a) provide summaries on a consistent and auditable basis of the net backlog NSR openings identified in this report;
   b) record ongoing reforestaion activities and any changes in forest land status that result from these activities; and
   c) monitor the change in forest land stocking status through silviculture activities funded under any future Federal- Provincial agreement.

[1] Forest and Range Resource Analysis, 1984. Ministry of Forests.
[2] Renewal, 1986. Vol. 1, No. 1. Fall 1986.

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land


Good and medium site net backlog* NSR+
0 – 5 thousand ha
5 – 10 thousand ha
10 – 15 thousand ha
15 – 20 thousand ha
20 – 25 thousand ha
25 – 30 thousand ha
30+ thousand ha

*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

TABLE 1 Summary table of British Columbia productive forest land statistics

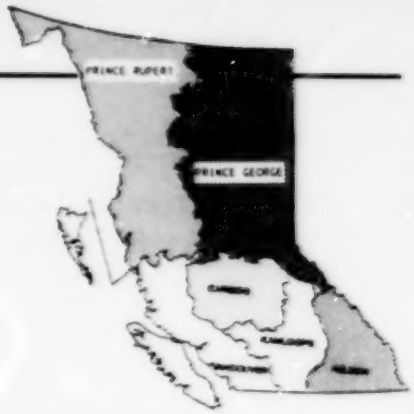
Region	Inventory database*			Gross good and medium backlog NSR (1)	Net+ good and medium site backlog NSR (1)		
	Total productive forest land	Total current productive and available forest land	Total not stocked forest land		Due to harvesting	Due to wildfire and other causes(2)	Total
	(area in hectares)						
Cariboo	5 939 000	3 925 605	157 000	34 784	23 876	3 150	26 346
Kamloops	4 446 000	3 657 034	227 000	90 195	45 630	12 239	57 869
Nelson	3 649 000	2 509 410	210 000	65 732	32 670	11 603	44 273
Prince George	17 421 000	9 412 878	2 080 000	255 759	140 762	83 443	224 205
Prince Rupert	9 393 000	3 563 812	907 000	94 825	26 442	51 688	78 130
Vancouver	5 057 000	3 079 518	198 000	6 243	5 333	535	5 868
Provincial total	45 905 000	26 148 257	3 779 000	547 538	274 713	162 658	436 691

* Sources: Ministry of Forests Annual Report and the 1984 Resource Analysis.
\+ Net area after deductions for inoperable, inaccessible and low economic priority areas.
(1). Sources: History Record Reports and hand compiled TFL submissions current to January 1990.
(2). Others include: Pest damage, flood and blowdown from wind.

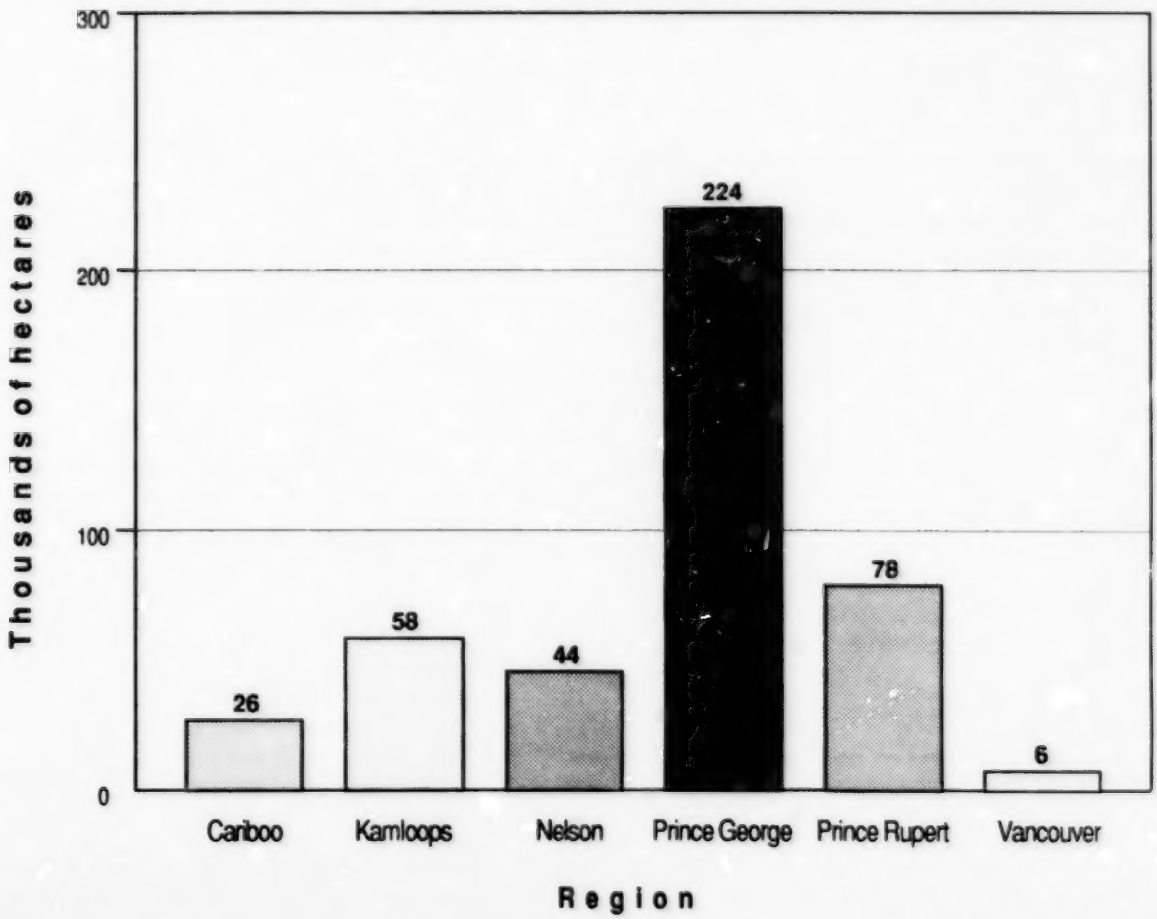
TABLE 2. Provincial summary of the net backlog* of not satisfactorily restocked land for good and medium site class land

Region	1984 Resource analysis	1988 Summary (1)	1990 Summary+	% Difference in 1984 and 1990 summaries
	(area in hectares)			
Cariboo	43 400	30 747	26 346	-38%
Kamloops	51 400	74 241	57 869	15%
Nelson	93 700	60 787	44 273	-53%
Prince George	488 700	271 747	224 205	-54%
Prince Rupert	40 500	106 396	78 130	93%
Vancouver	20 300	9 227	5 868	-71%
Provincial totals	738 000	553 145	436 691	-41%

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
\+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
\+ Data derived from TFL's and the Ministry of Forest's History Records.
(1) 1988 Summary of Backlog Not Satisfactorily Restocked Forest Land.



Provincial Net Backlog* Not Satisfactorily Restocked Land+ (Good and Medium Sites Only) By Forest Region



+ NSR – not satisfactorily restocked (includes non-commercial brush areas)
* Backlog – areas denuded prior to 1982
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licences.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Review of the Regional Pre-1982 Net Backlog Not Satisfactorily Restocked Land

Cariboo

The Ministry of Forests 1984 Forest and Range Resource Analysis estimated that the Cariboo Forest Region had 43 400 hectares of good and medium site land classified as backlog NSR land. The 1985 Canada - B.C. Forest Resource Development Agreement (FRDA) has provided funding for increased reforestation activities on these backlog NSR areas.

Increased planting and silviculture surveys have resulted in a decrease in the amount of backlog NSR. The 1990 summary estimates that 26 300 hectares of good and medium site backlog NSR remain in the Cariboo Forest Region. This is a decrease of 17 100 hectares or 38% from the 1984 figures.

Kamloops

In 1984, the Kamloops Forest Region had an estimated 51 400 hectares of good and medium sites classified as backlog NSR. The number of silviculture surveys on Crown land was increased through funding under FRDA, identifying additional areas which were NSR. The 1988 estimate of backlog NSR was 74 200 hectares.

The latest estimate (1990) of backlog NSR is 57 900 hectares. The reduction in backlog NSR can be attributed to the increased reforestation activities funded under FRDA, which have included the planting of more than 19 000 hectares since 1985 and the constant updating of information through the silviculture surveys.

Nelson

Planting and reclassification of stocking status following surveys funded by FRDA has reduced backlog NSR from 93 700 hectares in 1984 to 44 300 hectares in 1990. Some reduction has occurred due to areas being assessed as impractical for treatment – for example, fill-in planting on small areas within larger blocks, inaccessible wildfires, and other inoperable areas.

Further economic analysis needs to be carried out to establish priorities of activities with respect to timber supply and other resource management objectives. Most of the higher productive sites have been treated under FRDA. Tree Farm Licensees are reviewing their NSR areas with the expectation that plans will be developed for the reduction of the NSR backlog.

Experience has shown that past stocking standards were set too high, resulting in undesirable high stand densities and the subsequent need for juvenile spacing to control stocking. The review and modification of stocking standards is an ongoing process which has had an effect in reducing NSR estimates.

Prince George

The 1984 Forest and Range Resource Analysis estimated that the Prince George Forest Region had 488 700 hectares of good and medium site NSR. By 1988 the estimate was reduced to 271 700 hectares. The 1990 summary indicates that 224 200 hectares remain. The reductions in NSR can be attributed to an extensive FRDA reforestation program which included planting on over 52 900 hectares. In addition, a large survey program has found many sites previously classed as NSR to be satisfactorily stocked with natural regeneration.

In addition, recent changes in market demands for aspen are having a major effect on the estimate of NSR in the Region. In the past, aspen was not considered an acceptable tree species for reforesting certain ecosystems. Surveys are being carried out on areas stocked with aspen and previously classified as NSR. Many of these ecosystems are now being reclassified as satisfactorily restocked with aspen.

Much of the gross NSR in Prince George originated through wildfires in the remote Mackenzie, Fort Nelson, Fort St. John and Dawson Creek Timber Supply areas. Many of these areas are considered inoperable or inaccessible and have been removed from the net backlog NSR total. However, even

with these deductions, over 37% of the net backlog NSR remaining in the Prince George Region originated through wildfires and other causes (Table 1) and not through harvesting.

Many of the net backlog areas are not immediately treatable due to constraints imposed by other forest resource users. In many areas, reforestation must be delayed to maintain wildlife habitat adjacent to logged or burned openings. Large backlog NSR areas may not be treated all at once as significant changes in vegetation type would be created. Treatments may be delayed to allow "green-up" of areas before all treatable NSR can be reforested. Over the next few years natural regeneration will continue on many areas. A major inventory will be mounted in 1990 to firm up the numbers by 1991.

Prince Rupert

The Ministry of Forests 1984 Forest and Range Resource Analysis estimated that the Prince Rupert Forest Region had 40 500 hectares of good and medium site land classified as backlog NSR land. The 1985 Canada- B.C. Forest Resource Development Agreement (FRDA) has provided funding for increased reforestation activities on these NSR areas.

The 1988 estimate of backlog NSR rose to 106 400 hectares as a result of increased silviculture surveys. Much of the increase in NSR was due to portions of the Cassiar TSA being reclassified from poor site to good and medium site and being considered economic to reforest. Between May 1985 and March 1990 over 87 000 hectares had been surveyed, and 11 900 hectares planted in the Prince Rupert Region.

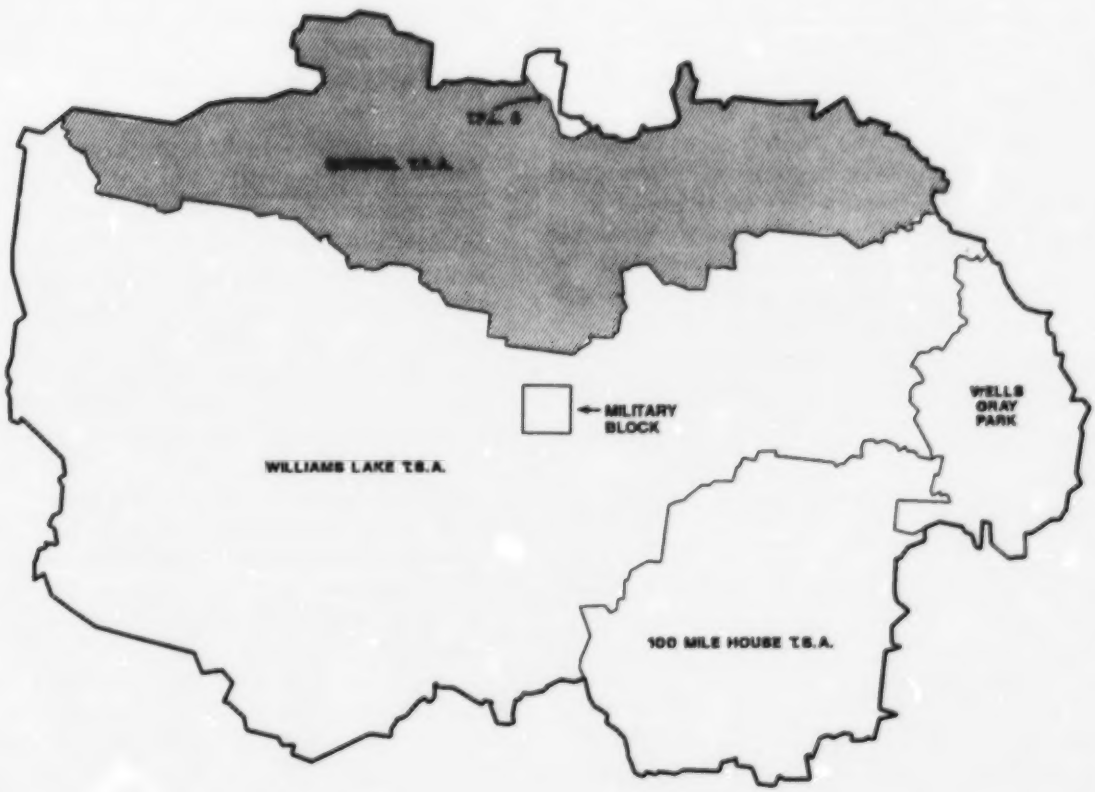
The 1990 summary indicates that 78 100 hectares of good and medium site backlog NSR still remain. About 66% of this net backlog NSR originated from wildfires and other natural causes. A second FRDA agreement is needed to reduce the remaining good and medium backlog NSR land.

Vancouver

In 1984 the Vancouver Forest Region had an estimated 20 300 hectares of good and medium site classified as backlog NSR. The 1990 summary indicates that 5 900 hectares remain (pages 20 and 21). The reduction in backlog NSR can be attributed to the increased reforestation activities funded through the Forest Resource Development Agreement. Increased planting on backlog NSR areas and silviculture surveys have resulted in less area being classified as NSR. Much of the remaining backlog NSR on good and medium sites will be reclassified as satisfactorily restocked after surveys are carried out using updated ecosystem classification procedures, tree species selection guides and appropriate silviculture stocking standards.

By 1991 all economically accessible areas will be planted, and all other areas will be reclassified by silviculture surveys. There will be little or no backlog reforestation required in the Vancouver Forest Region in the future. It is projected that by the end of 1991 Vancouver will be the first Forest Region with little or no backlog NSR.

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land



Good and medium site net backlog* NSR*

0 – 5	thousand ha	20 – 25	thousand ha
5 – 10	thousand ha	25 – 30	thousand ha
10 – 15	thousand ha	30+	thousand ha
15 – 20	thousand ha		

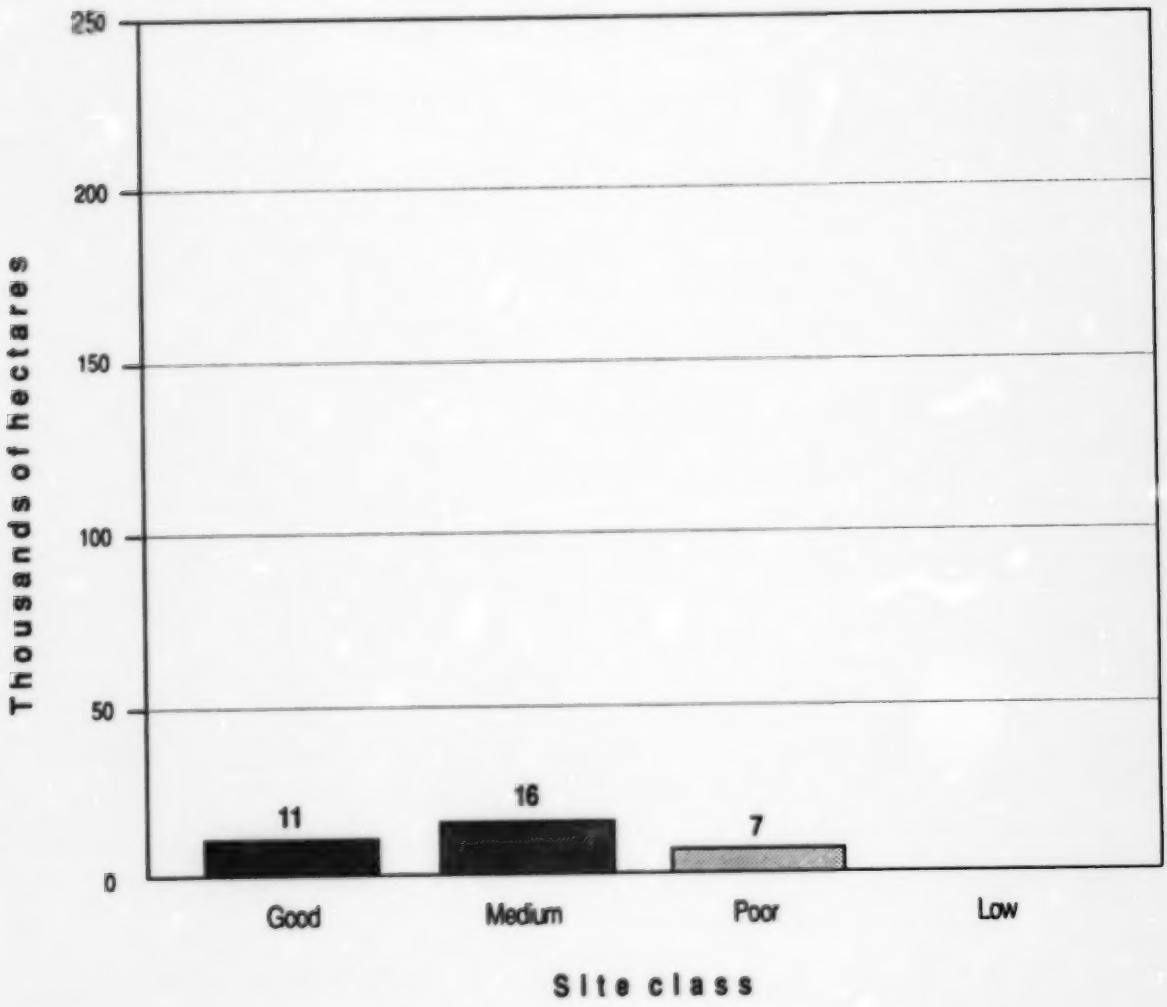
*Backlog – areas denuded prior to 1982

*NSR – not satisfactorily restocked (includes non-commercial brush areas)

Provincial Crown Forest Land

Provincial Good & Medium Site Net Backlog NSR

Net Backlog* NSR+ by Site Class

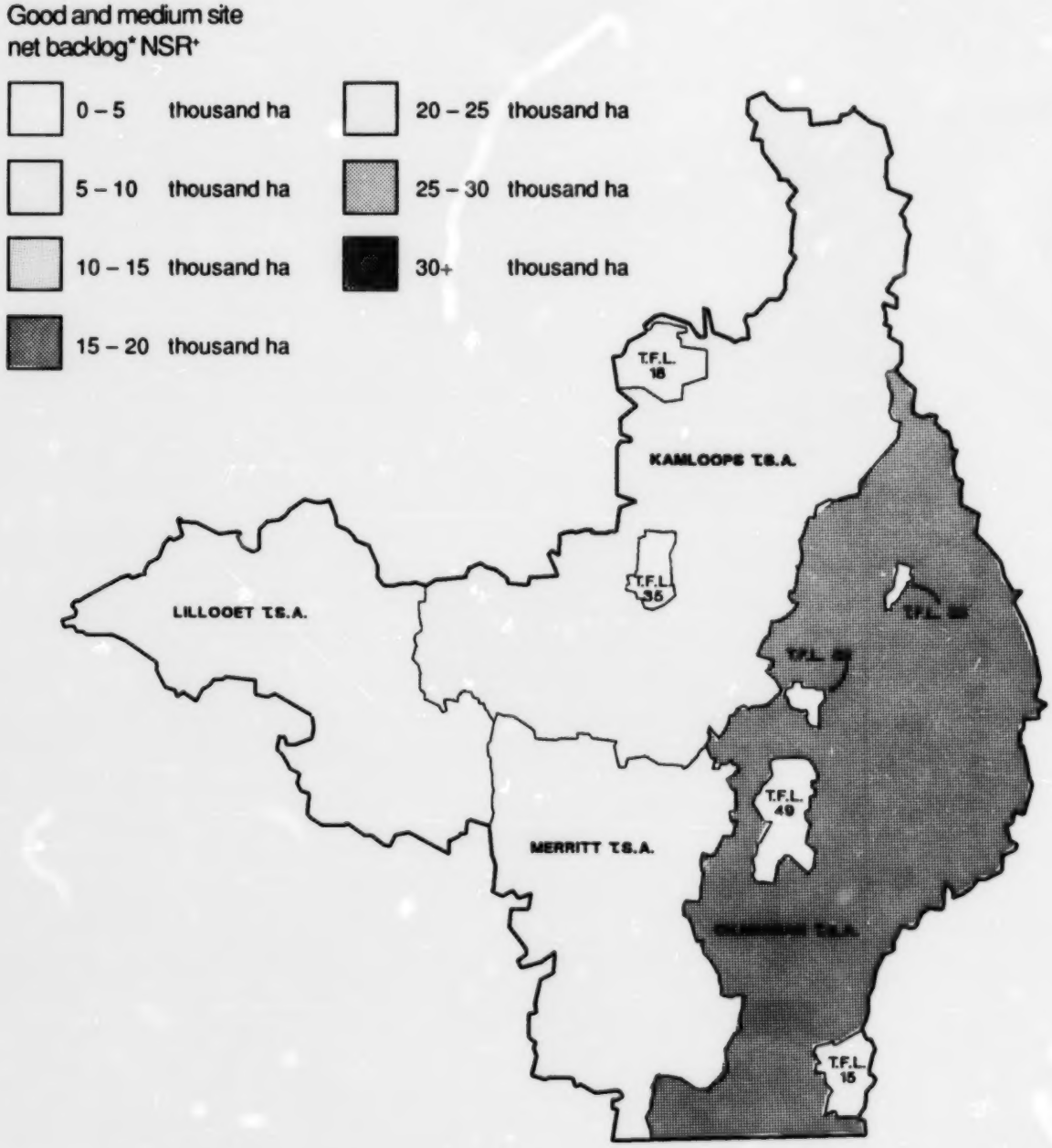


*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

Kamloops Forest Region

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land



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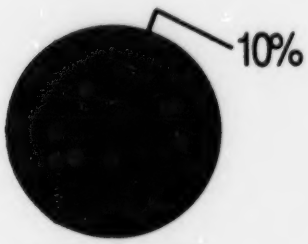
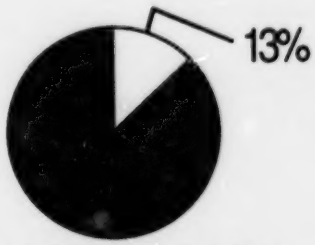
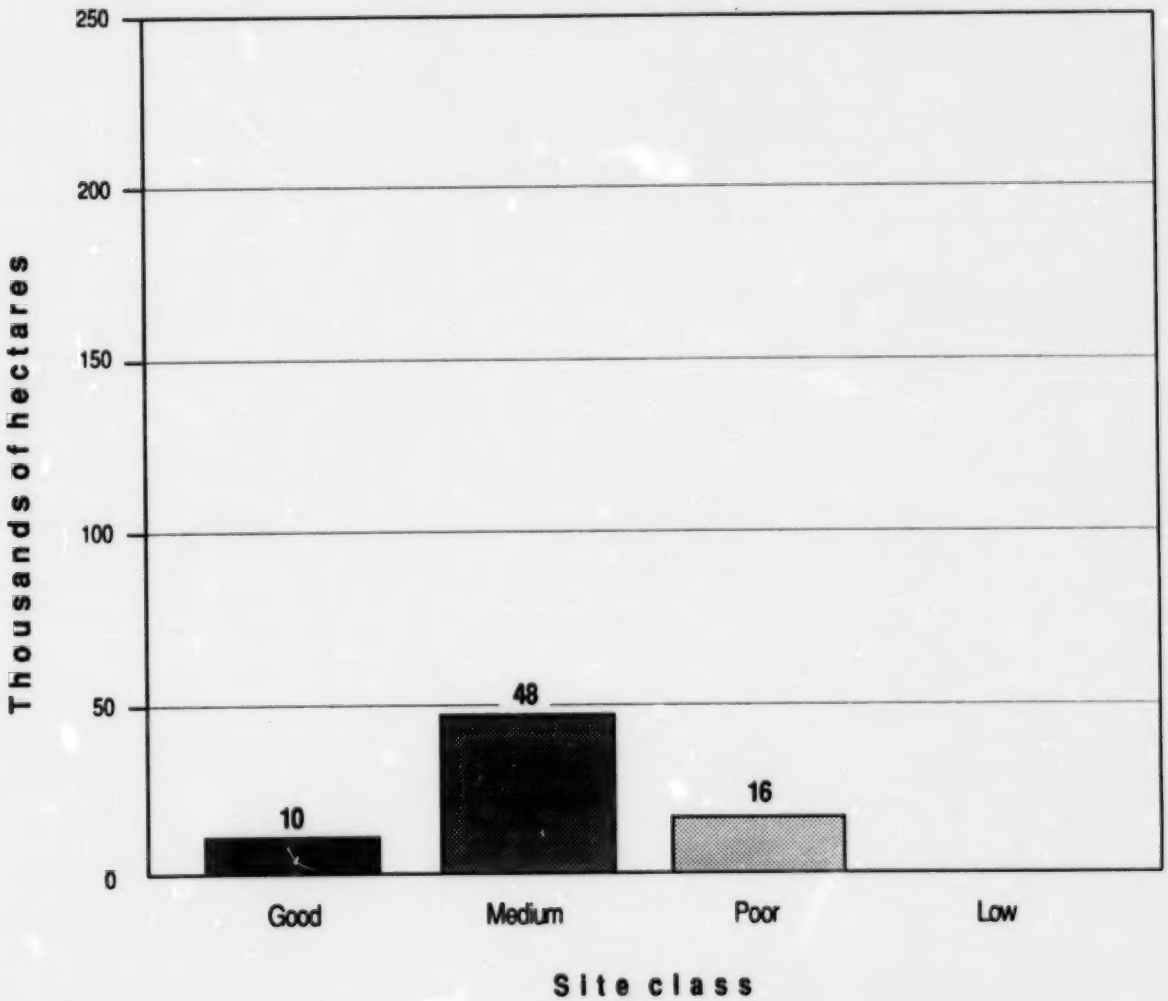


Provincial Crown
Forest Land



Provincial Good & Medium Site
Net Backlog NSR

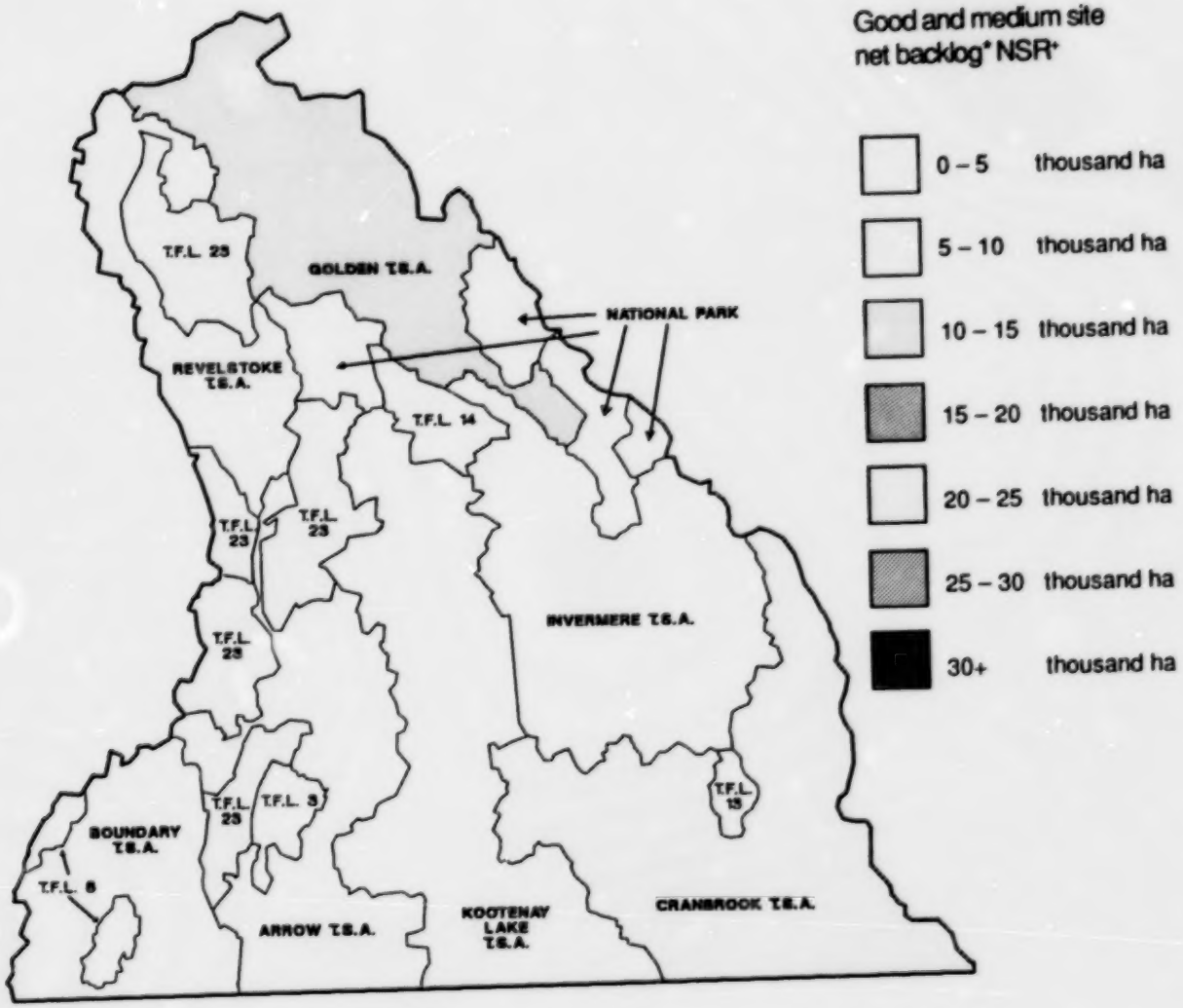
Net Backlog* NSR+ by Site Class



*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land



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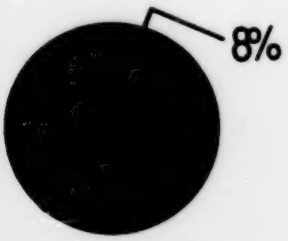
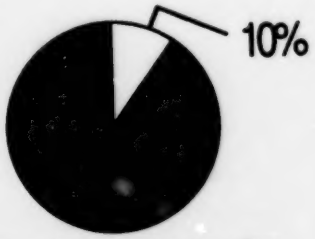
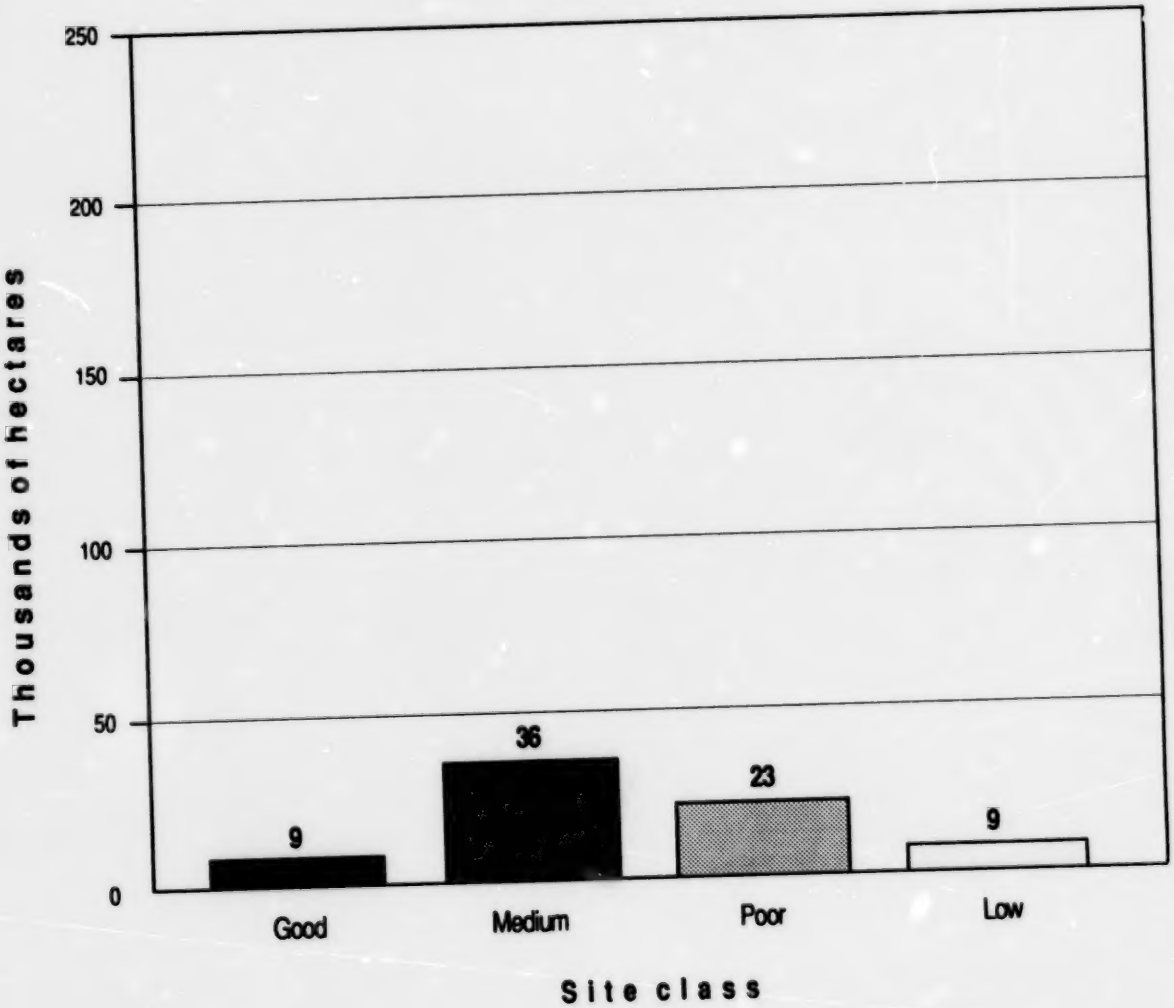


Provincial Crown Forest Land



Provincial Good & Medium Site Net Backlog NSR

Net Backlog* NSR+ by Site Class



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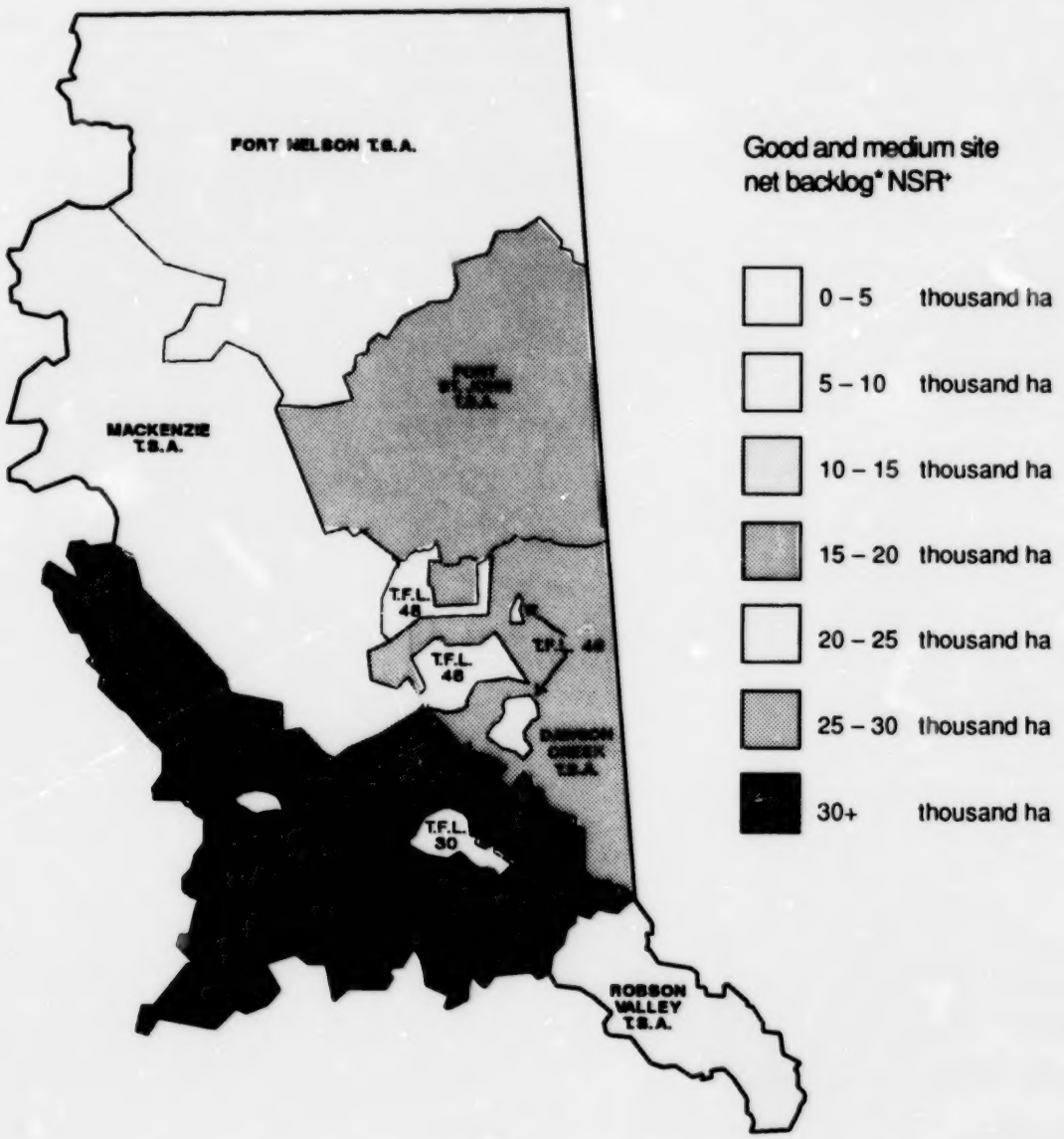
Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land



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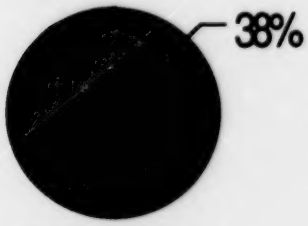
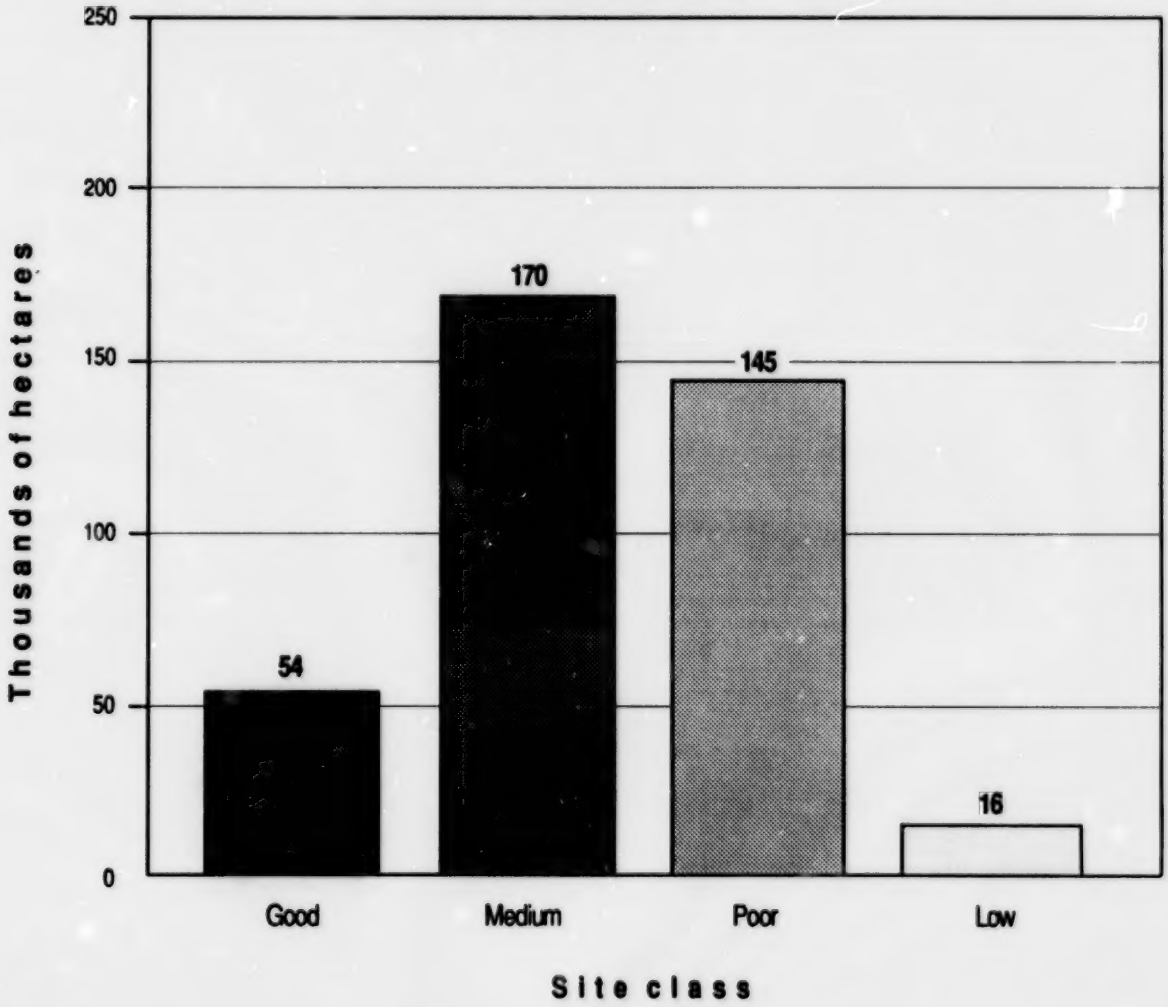


Provincial Crown
Forest Land

Provincial Good & Medium Site
Net Backlog NSR

Net Backlog* NSR+ by Site Class



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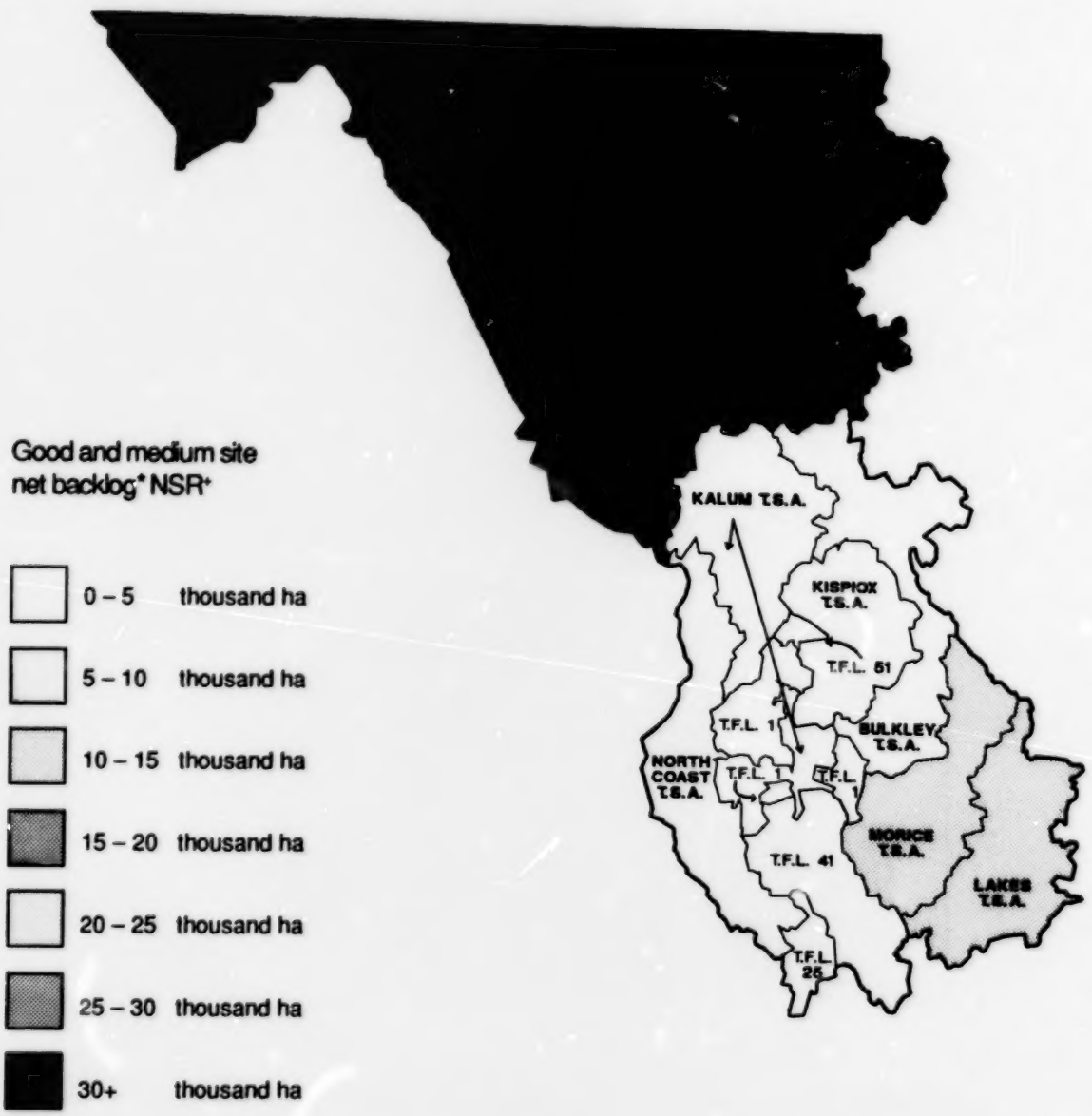
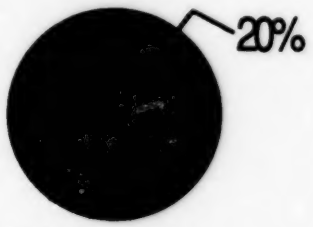
+NSR – not satisfactorily restocked (includes non-commercial brush areas)

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land

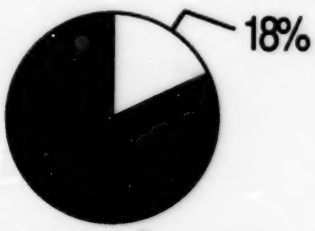


*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

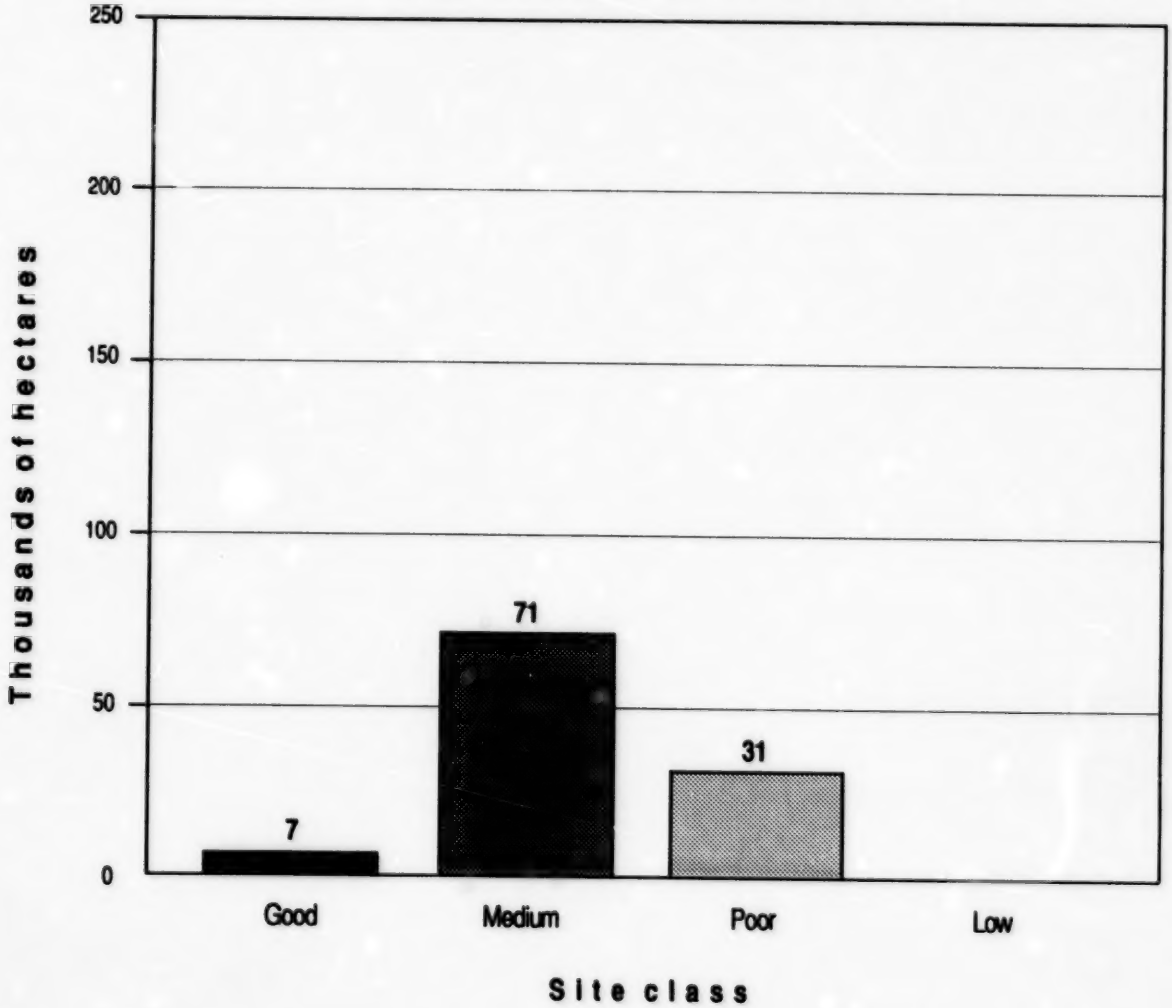


Provincial Crown
Forest Land



Provincial Good & Medium Site
Net Backlog NSR

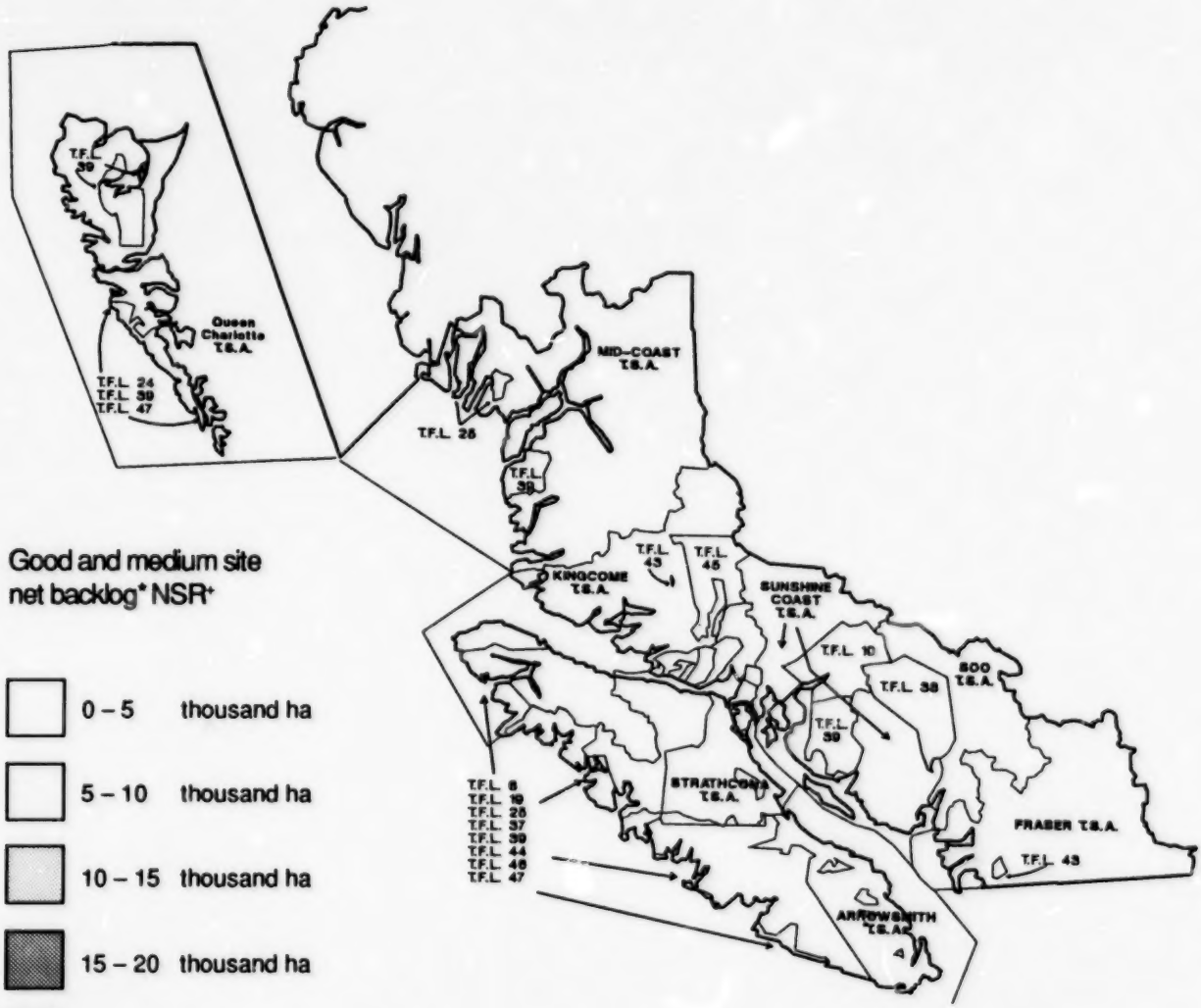
Net Backlog* NSR+ by Site Class



*Backlog – areas denuded prior to 1982

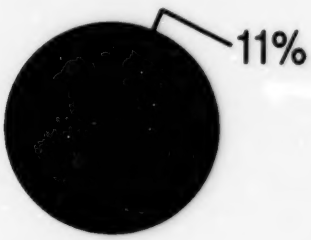
+NSR – not satisfactorily restocked (includes non-commercial brush areas)

Location of the Good and Medium Site Net Backlog* Not Satisfactorily Restocked Land

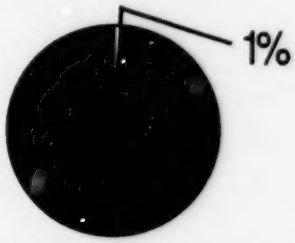


*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

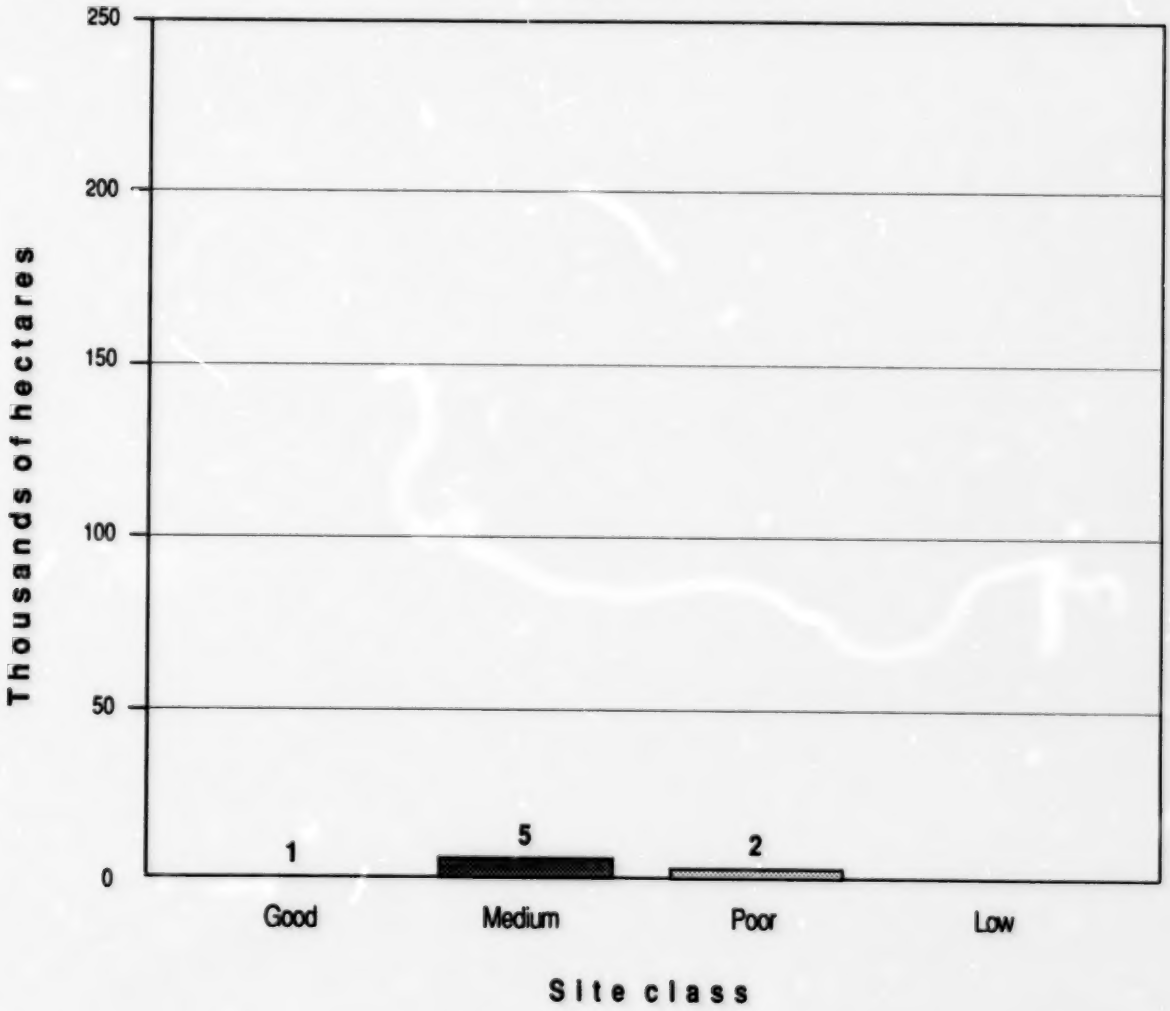


Provincial Crown
Forest Land



Provincial Good & Medium Site
Net Backlog NSR

Net Backlog* NSR+ by Site Class



*Backlog – areas denuded prior to 1982

+NSR – not satisfactorily restocked (includes non-commercial brush areas)

Appendix 1 Summary of Regional Proportions

Summary Table of Provincial/Regional Proportions

Region	Percent of Provincial Crown	
	Productive forest land	Good and medium net backlog* NSR*
Cariboo	13%	6%
Kamloops	10%	13%
Nelson	8%	10%
Prince George	38%	51%
Prince Rupert	20%	18%
Vancouver	11%	1%
Provincial totals	100%	100%

* BACKLOG - areas denuded prior to 1982.

* NSR – not satisfactorily restocked (includes non-commercial brush areas)

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Total Net Backlog* Not Satisfactorily Restocked Land+

Region	Site class				
	Good	Medium	Poor	Low	Total
	(area in hectares)				
Cariboo	10 797	15 549	6 891	77	33 314
Kamloops	9 924	47 946	15 651	39	73 559
Nelson	8 555	35 718	23 311	8 536	76 119
Prince George	54 407	169 798	144 628	16 369	385 201
Prince Rupert	7 131	70 999	31 311	428	109 869
Vancouver	574	5 295	2 318	57	8 243
Provincial totals	91 386	345 305	224 110	25 505	686 305
Total good and medium	436 691 Hectares				

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Region	Management unit	Site class				
		Good	Medium	Poor	Low	Total
				(area in hectares)		
Cariboo	TSA	10 449	15 549	6 891	77	32 966
	TFL	348	0	0	0	348
	Total	10 797	15 549	6 891	77	33 314
Kamloops	TSA	9 137	40 418	15 583	39	65 177
	TFL	787	7 528	68	0	8 382
	Total	9 924	47 946	15 651	39	73 559
Nelson	TSA	5 742	27 685	13 749	282	47 458
	TFL	2 813	8 033	9 562	8 254	28 661
	Total	8 555	35 718	23 311	8 536	76 119
Prince George	TSA	46 760	144 371	111 556	16 368	319 055
	TFL	7 647	25 427	33 072	0	66 146
	Total	54 407	169 798	144 628	16 368	385 201
Prince Rupert	TSA	6 905	68 486	30 815	398	106 604
	TFL	226	2 513	496	30	3 265
	Total	7 131	70 999	31 311	428	109 869
Vancouver	TSA	433	4 688	2 197	27	7 345
	TFL	141	607	121	30	898
	Total	574	5 295	2 318	57	8 243
Province	TSA	79 426	301 197	180 791	17 191	578 605
	TFL	11 960	44 108	43 319	8 314	107 700
	Total	91 386	345 305	224 110	25 505	686 305

Total good and medium **436 691 Hectares**

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Cariboo Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	23	100 Mile House	697	2 363	1 269	0	4 329
	26	Quesnel	6 487	8 527	771	0	15 785
	29	Williams Lake	3 265	4 659	4 851	77	12 852
Total TSA			10 449	15 549	6 891	77	32 966
TFL	5	MacKenzie-Cariboo (Quesnel)	348	0	0	0	348
Total TFL			348	0	0	0	348
Total Region			10 797	15 549	6 891	77	33 314

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Kamloops Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	11	Kamloops	3 669	17 621	4 422	8	25 720
	15	Lillooet	583	2 027	3 618	31	6 259
	18	Merrit	1 523	4 336	3 559	0	9 418
	22	Okanagan	3 362	16 434	3 984	0	23 780
Total TSA			9 137	40 418	15 583	39	65 177
TFL	15	Inkaneep (Okanagan Falls)	5	100	9	0	114
	18	Clearwater	590	6 577	51	0	7 217
	33	Sicamous	0	0	0	0	0
	35	Jamieson Creek	192	327	8	0	527
	49	Okanagan (Kelowna)	0	384	0	0	384
	49	Okanagan (Armstrong)	0	140	0	0	140
Total TFL			787	7 528	68	0	8 382
Total Region			9 924	47 946	15 651	39	73 559

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Nelson Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	1	Arrow	776	3 306	1 675	0	5 757
	2	Boundary	108	828	252	0	1 188
	5	Cranbrook	878	4 669	2 238	260	8 045
	7	Golden	2 669	8 696	5 663	0	17 028
	9	Invermere	486	2 651	1 581	22	4 740
	13	Kootenay Lake	342	4 215	1 987	0	6 544
	27	Revelstoke	483	3 320	353	0	4 156
Total TSA			5 742	27 685	13 749	282	47 458
TFL	3	Little Slocan (Arrow)	101	1 958	201	0	2 259
	8	Boundary Creek	294	700	0	0	994
	13	Bull River (Cranbrook)	38	35	9	0	82
	14	Spillimacheen (Invermere)	12	164	0	0	176
	23	Arrow Lakes (Revelstoke)	2 368	5 176	9 352	8 254	25 150
Total TFL			2 813	8 033	9 562	8 254	28 661
Total Region			8 555	35 718	23 311	8 536	76 119

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Prince George Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	8	Fort Nelson	8 555	11 662	18 905	15 352	54 474
	16	Mackenzie	4 403	17 785	62 345	57	84 590
	17	Robson Valley (McBride)	1 000	5 433	1 672	642	8 747
	24	Prince George	30 031	76 295	24 035	317	130 678
	40	Fort St. John	2 069	16 231	637	0	18 937
	41	Dawson Creek	702	16 965	3 962	0	21 629
Total TSA			46 760	144 371	111 556	16 368	319 055
TFL	30	Sinclair (N.E. of P.George)	5 372	4 142	564	0	10 078
	42	Tanizul (Fort St James)	0	810	0	0	810
	48	Chetwynd	2 275	20 475	32 508	0	55 258
Total TFL			7 647	25 427	33 072	0	66 146
Total Region			54 407	169 798	144 628	16 368	385 201

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Prince Rupert Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	3	Bulkley	584	4 255	1 710	0	6 549
	4	Cassiar	257	39 570	1 683	0	41 510
	10	Kalum	2 007	1 984	9 862	0	13 853
	12	Kispiox	1 261	2 029	3 067	0	6 357
	14	Lakes	965	10 714	4 274	268	16 221
	20	Morice	1 302	8 713	219	66	10 300
	21	North Coast	529	1 221	10 000	64	11 814
Total TSA			6 905	68 486	30 815	398	106 604
TFL	1	Port Edward (Kalum)	118	1 523	51	0	1 692
	25	Naka	0	0	0	0	0
	41	Kitimat	21	92	10	1	124
	51	Cranberry (Kispiox)	87	898	435	29	1 449
Total TFL			226	2 513	496	30	3 265
Total Region			7 131	70 999	31 311	428	109 869

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Appendix 2 Summary of Net Backlog* NSR by Region, TSA and TFL

Vancouver Forest Region

Regional Summary of Net Backlog* Not Satisfactorily Restocked Land+

Management unit type, number and location			Site class				
			Good	Medium	Poor	Low	Total
			(area in hectares)				
TSA	19	Mid-coast	32	128	91	6	257
	25	Queen Charlotte	23	10	0	0	33
	30	Fraser	4	953	802	0	1 759
	31	Soo	61	561	705	0	1 327
	33	Kingcome	121	430	44	0	595
	37	Strathcona	17	323	196	0	536
	38	Arrowsmith	0	453	45	0	498
	39	Sunshine Coast	175	1 830	314	21	2 340
Total TSA			433	4 688	2 197	27	7 345
TFL	6	Quatsino (Port McNeill)	0	25	0	0	25
	10	Toba (Toba River)	114	43	17	0	174
	19	Tahsis (Gold River)	15	28	34	30	107
	24	Moresby (Q.C.I.)	0	64	0	0	64
	25	Naka (Port McNeill)	0	113	0	0	113
	26	Mission	0	0	0	0	0
	37	Nimkish	0	0	0	0	0
	38	Squamish (Squamish River)	0	180	53	0	233
	39	Powell River (all divisions)	10	112	16	0	138
	43	Fraser/Hanathko/Kingcome	0	0	0	0	0
	44	Alberni (Port Alberni)	2	42	1	0	45
	45	Cordera-Knight (all divisions)	0	0	0	0	0
	46	West Coast (all divisions)	0	0	0	0	0
	47	Duncan Bay (all divisions)	0	0	0	0	0
Total TFL			141	607	121	30	898
Total Region			574	5 295	2 318	57	8 243

* BACKLOG - areas denuded prior to 1982.
* Backlog NSR represents Net NSR after deductions as per Appendix 3.
+ Summary for Crown Land only and includes Timber Supply Areas and Tree Farm Licenses.
+ Data derived from TFL's and the Ministry of Forest's History Records.

Summary of Backlog* Net-down process.
Crown Land Only

Region	Site class	Gross[1] NSR area (ha)	Inoper.[2] N.S.R (ha)	Selection[3] system (ha)	Shelter &[4] seed tree (ha)	NSR <12 yrs[5] >700 ws/ha. (ha)	NSR>=12 yrs[6] >500 ws/ha. (ha)	Total for[7] area <5 ha (ha)	Total area deducted	T.S.A.[8] net area NSR (ha)	T.F.L.[9] net area NSR (ha)	Total[10] net area NSR (ha)	Total net good & medium	Total gross good & medium
		Area Deducted												
Province	Good	113 331	0	8 040	6 256	2 685	4 237	726	21 944	79 426	11 922	91 387	436 692	547 337
	Medium	434 006	15 601	38 594	12 012	11 552	8 686	2 256	88 701	301 877	44 073	345 305		
	Poor	269 322	17 017	21 559	1 195	3 132	1 732	577	45 212	181 378	43 310	224 110		
	Low	32 734	6 756	198	0	212	38	25	7 229	17 191	8 314	25 505		
	-All-	849 392	39 374	68 391	19 463	17 581	14 693	3 584	163 086	579 872	107 619	686 306	436 692	547 337

* Backlog - areas denuded prior to 1982.

1. Column "Gross NSR Area" represents Gross NSR as recorded on the History Records and Hand Complied TFL Submissions.
   Net-Down Criteria:
2. - Inoperable NSR refers to areas that are untreatable due to inaccessibile or uneconomical conditions.
3. - Areas logged by the Selection silviculture system are assumed to regenerate naturally.
4. - Refers to areas logged by the Shelterwood and Seed Tree silviculture systems, these areas are also assumed to regenerate naturally.
5. - Includes all NSR areas with an average tree age of less than 12 years and stocking levels greater than 700 well spaced trees per hectare, these areas now meet provincial minimum stocking standards.
6. - Includes all NSR areas with an average tree age of more than 12 years and stocking levels greater than 500 well spaced stems per hectare, these areas are considered a low priority for treatment.
7. - Includes all NSR areas less than 5 hectares in size, these areas will regenerate naturally or are considered a low priority for treatment or uneconomic for treatment.
8. History Records were used almost exclusively for all Regions to generate net TSA backlog NSR statistics and were current to January 1, 1990.
9. Tree Farm License NSR was derived from hand complied backlog NSR submissions.
10. Column "Net Area Treatable" represents the "NET NSR" after deductions.

Summary of Backlog* Net-down process.
Crown Land Only

Region	Site class	Gross[1] NSR area (ha)	Inoper.[2] N.S.R (ha)	Selection[3] system (ha)	Shelter &[4] seed tree (ha)	NSR <12 yrs[5] >700 ws/ha. (ha)	NSR>=12 yrs[6] >500 ws/ha. (ha)	Total for[7] area <5 ha (ha)	Total area deducted	T.S.A.[8] net area NSR (ha)	T.F.L.[9] net area NSR (ha)	Total[10] net area NSR (ha)	Total net good & medium	Total gross good & medium
		Area Deducted												
Cariboo														
	Good	13 021	0	924	164	943	108	85	2 224	10 449	348	10 797	26 346	34 584
	Medium	21 563	10	4 302	360	885	261	196	6 014	16 229	0	15 549		
	Poor	11 788	1 782	2 850	0	186	36	43	4 897	7 478	0	6 891		
	Low	165	0	85	0	0	0	3	88	77	0	77		
	-All-	46 537	1 792	8 161	524	2 014	405	327	13 223	34 233	348	33 314		
Kamloops														
	Good	15 202	0	3 052	202	436	1 424	164	5 278	9 137	787	9 924	57 869	90 194
	Medium	74 993	21	18 767	502	3 332	3 858	567	27 047	40 418	7 528	47 946		
	Poor	30 696	0	13 780	55	394	659	157	15 045	15 583	68	15 651		
	Low	42	0	0	0	0	0	3	3	39	0	39		
	-All-	120 932	21	35 599	759	4 162	5 941	891	47 373	65 177	8 382	73 559		
Nelson														
	Good	13 193	0	2 338	691	335	1 120	154	4 638	5 742	2 775	8 555	44 273	65 732
	Medium	52 539	146	7 995	2 287	3 270	2 693	430	16 821	27 685	7 998	35 718		
	Poor	29 940	379	4 061	316	954	773	146	6 629	13 749	9 553	23 311		
	Low	8 660	0	83	0	0	38	3	124	282	8 254	8 536		
	-All-	104 332	525	14 477	3 294	4 559	4 624	733	28 212	47 458	28 579	76 120		

See page 32 for explanation of catagories.

Summary of Backlog* Net-down process.
Crown Land Only

Region	Site class	Gross[1] NSR area (ha)	Inoper.[2] N.S.R (ha)	Selection[3] system (ha)	Shelter &[4] seed tree (ha)	NSR <12 yrs[5] >700 ws/ha. (ha)	NSR>=12 yrs[6] >500 ws/ha. (ha)	Total for[7] area <5 ha (ha)	Total area deducted	T.S.A.[8] net area NSR (ha)	T.F.L.[9] net area NSR (ha)	Total[10] net area NSR (ha)	Total net good & medium	Total gross good & medium
		Area Deducted												
Prince George														
	Good	62 639	0	1 069	5 112	595	1 230	226	8 232	46 760	7 647	54 407	224 205	255 759
	Medium	193 120	7 480	3 508	7 993	2 774	1 084	483	23 322	144 371	25 427	169 798		
	Poor	152 914	6 778	301	511	622	32	42	8 286	111 556	33 072	144 628		
	Low	16 416	16	0	0	32	0	0	48	16 368	0	16 368		
	-All-	425 089	14 274	4 878	13 616	4 023	2 346	751	39 888	319 055	66 146	385 201		
Prince Rupert														
	Good	8 683	0	657	87	376	355	77	1 552	6 905	226	7 131	78 130	94 825
	Medium	86 142	7 944	4 013	870	1 257	710	349	15 143	68 486	2 513	70 999		
	Poor	41 390	8 053	468	313	927	232	86	10 079	30 815	496	31 311		
	Low	7 388	6 740	30	0	180	0	10	6 960	398	30	428		
	-All-	143 603	22 737	5 168	1 270	2 740	1 297	522	33 734	106 604	3 265	109 869		
Vancouver														
	Good	594	0	0	0	0	0	20	20	433	141	574	5 869	6 243
	Medium	5 649	0	9	0	34	80	231	354	4 688	607	5 295		
	Poor	2 594	25	99	0	49	0	103	276	2 197	121	2 318		
	Low	6	0	0	0	0	0	6	6	27	30	57		
	-All-	8 899	25	108	0	83	80	360	656	7 345	898	8 243		

See page 32 for explanation of catagories

Appendix 4 Glossary

Backlog NSR:

NSR lands resulting from land denuded before January 1, 1982.

Current Productive and Available Forest Land:

The forest land base remaining after reductions are made for Environmentally Sensitive Areas (ESA's) and the permanent forest land alienations anticipated over the next 20 years, (as per the 1984 Forest and Range Resource Analysis).

Gross NSR:

Total NSR before deductions.

NC Brush:

Non-commercial brush. Areas that have been 60-percent or more covered by brush one or more meters high.

Net NSR:

NSR remaining after deductions are made for areas that are uneconomic, inaccessible, inoperable, of poor and low site classes or are likely to naturally regenerate.

Not Stocked Forest Land:

Not stocked includes NSR areas on which forest stands have been disturbed by harvesting, wildfire or other causes and have not been restocked with sufficient trees of acceptable, commercial species. The area for NSR lands includes current and backlog (pre-1982) NSR. Also includes non-commercial areas with forest cover and non-commercial brush areas that have been 60-percent or more covered by brush one or more meters high.

NSR:

Not satisfactorily restocked. Forest lands that are not growing to their full potential due to an insufficient stocking of acceptable commercial tree species.

Productive Forest Land:

Forest land that is capable of producing a merchantable stand within a reasonable length of time.

Site Class:

A measure of forest site productivity as determined by site index. In this publication, the site classes are good, medium, poor and low.

TFL:

Tree farm licence. Privately managed sustained yield units in which the Crown adds forest land to the company's private holdings (if any) sufficient to provide a continuous supply of wood for an existing or planned mill.

Treatable NSR:

Represents the portion of net NSR that is potentially treatable given present management constraints.

TSA:

Timber Supply Area. An area of the province created by the Ministry of Forests for the purpose of analysis, planning and management of timber resources. Boundaries have been determined on the basis of present and expected population centres, transportation networks, manufacturing facilities and existing administrative boundaries.